Applicants traverse the rejection of claims 19 and 36 as indefinite under 35 U.S.C. 112, first paragraph. Claims 19 and 36 specify, *inter alia*, an empty state providing a channel having an owner and to which any station can have access if not being used by the owner. The Office action states that these limitations are not included in the specification for the empty state, but rather only for the reserved state. In fact, page 15, lines 17-21, which describe the empty state, note that mobile stations can contend for use of a data channel. Lines 24-26 describe pre-emption relative to the reserved state. Page 16 includes a state table, see Table 3, for selecting a next channel according to a scheduling algorithm. The top half of the table references a channel state as "empty or reserved". The first listing includes a note 1 which represents "Owner pre-emption". As such, pre-emption can be used for the empty state or the reserved state. The existence of owner pre-emption means that if there is an owner of an empty state channel, then that owner can resume access on demand, as described previously relative to the reserved state. This is clear support in the specification so that the rejection should be withdrawn.

Applicants traverse the rejection of claims 1-6, 11, 13-14, 19-23, 28, 30-31, 36-42, 47, 49-50, 58-64, 69, 71-72, 81-87, 92, 94-95 and 103-106 as obvious over Mayrand et al. U.S. Patent No. 5,504,939 in view of Enns et al. U.S. Patent No. 6,658,010.

Independent claim 1 specifies a method for controlling communications access between a hub and a plurality of distributed stations over a medium. The method comprises the steps of the hub allocating a plurality of channels for data communication between the stations and the hub. The number of channels is at least equal to the number of stations. Each station owns at least one channel. Each channel is varyingly in a distinct one of an empty, a reserved, or an owner state.

The empty state provides a channel to which any state can have access. The reserved state provides a channel having an owner and to which a station having made a reservation with the hub, but not owning the channel, can have access if not being used by the owner, and further to which the owner can resume access on demand. The owner state provides a channel to which only the owning station has access. The hub reallocates the respective state and/or the number of channels over time on the basis of each station's data requirements.

The cited references, alone or in any proper combination, do not disclose or suggest a method of controlling communications including a plurality of channels with each channel being varyingly in a distinct one of an empty, reserved, or an owner state.

The present invention, as defined by claim 1, define that channels are varyingly in a distinct one of three states. These states are empty, reserved or owner. Additionally, the characteristics of these states are defined in the claim. An empty state provides a channel to which any station can gain access. The reserve state provides a channel having an owner and to which a station having made a reservation with the hub, but not owning the channel, can have access if not being used by the owner. The owner state provides a channel to which only the owning station has access.

Mayrand et al. do not disclose or suggest the channels being in a distinct one of three states. At most, Mayrand et al. disclose the use of two traffic states. Mayrand et al. teaches, at col. 6, lines 21-53, that following receipt of a communication channel seizure request, a call type determination is made. Based on that determination, a suitable communication channel is selected from an available pool of communication channels. Mayrand et al. specifically teaches at col. 6,

lines 32-33, that "the selected channel is assigned and the call is set up for communication". The selection step does not render the channel in a so-called "state" as a remote device cannot have access to a selected channel, only an assigned channel. Moreover, Mayrand et al. describe that "the call type is used to determine the communication channel group from which the communication channel is selected for assignment to the call", see col. 3, lines 10-13.

As is apparent, Mayrand et al. discloses the discrimination of a call type then matches a call type with voice channel groups and, from a selected group, selects a voice channel. Mayrand et al. thus teaches the selection of an appropriate voice channel from a pool of available channels. In a sense, the voice channel can be allocated or assigned. This can be thought of as the channel having one of two states. One state is that the channel is available. The second state is that the channel is assigned.

Whether or not a channel is available, i.e., unassigned, or assigned, is unrelated to the claimed invention which uses states to define a characteristic as to how the channel can be used. There is no such characterization of any channels disclosed or suggested in Mayrand et al. Instead, channels are assigned to groups which are associated with selected call types. There is no concept of ownership of channels with respect to any one of a plurality of distributed stations, as recited in claim 1 herein.

The action references Figs. 3 and 6 of Mayrand et al. as describing three states. Referencing step 21, the action states that a voice channel being selected is a reserve state. In fact, there is no channel selected. Block 21 relates to a seizure request for a voice channel. This has nothing to do with the state of any channel. Regarding block 24, the fact that a channel is available

has nothing to do with whether or not the channel has an empty state, i.e., a channel to which any station can have access. Finally, assigning a selected channel for a station in block 25 has nothing to do with whether or not the selected channel is a channel to which only the owning station has access. More particularly, there is no disclosure or suggestion that the number of channels is at least equal to the number of stations and each station owns at least one channel.

As the Court of Appeals, Federal Circuit, held in In re Wright, 6 USPQ2d 1959, 1962 (Fed. Cir. 1988):

> "The problem solved by the invention is always relevant. The entirety of a claimed invention, including the combination viewed as a whole, the elements thereof, and the properties and purpose of the invention, must be considered.
>
> Factors including unexpected results, new features, solutions of a different problem, novel properties, are all considerations in the determination of obviousness in terms of 35 U.S.C. §103. When such factors are described in the specification they are weighed in determining, in the first instance, whether the prior art presents a prima facie case of obviousness."

The problem solved by the present invention, namely providing an access control protocol for data communications, using three distinct channel states based on the concept of ownership, is unrelated to the problem solved by Mayrand et al. which relate to allocating channels based on the capabilities of the mobile station, the nature of the call and the characteristics of the subscriber.

The action is correct where it describes the deficiencies of Mayrand et al. with respect to the claimed invention. In fact, Mayrand et al. is not remotely relevant as it does not describe three

distinct states for each channel, any concept of ownership of a channel or how such ownership effects access of other stations.

Enns et al. do not disclose or suggest the deficiencies noted with respect to Mayrand et al. Enns et al. discloses a method in which a demand from a remote device for additional band width is accommodated for by allocating the resources of a shared channel. Enns et al. state that "a channel can be declared to be 'dedicated' and will never be assigned to more than one user at a time, or a channel can be declared to be "shared" and be assigned several users at a time. See col. 13, lines 18-21. Enns et al. further discloses that "as the need for dedicated channels arises for other devices . . . the scheduler may move a remote device which is not entitled to dedicated service to a channel that is shared". See col. 15, lines 16-19. This is distinct from the claimed invention which discloses that there is allocated a plurality of channels and the number of channels is at least equal to the number of stations with each station owning at least one channel. Thus, each station has at least one dedicated channel, in contrast to Enns et al., in which the possibility of a device having to use a shared channel exists. The concept of a shared channel is distinct from a channel in which an owner can resume access on demand. It is therefore considered that the situation of applying the ends allocation method to the Mayrand et al. system will not result in a system corresponding to claim 1.

Thus, the combination does not result in the claimed invention. Nor is the combination proper. The combination is premised on the Examiner's incorrect interpretation of the teachings of Mayrand et al. as describing the use of three distinct states, which it does not.

For the above reasons, claim 1 is not obvious over the cited references.

Claims 2-6, 11, 13 and 14 depend from claim 1 and are believed allowable for the same reasons therefor.

Independent claim 19 differs from claim 1 in specifying that the empty state provides a channel having an owner and to which any station can have access if not used by the owner, and further to which the owner can resume access on demand. Claim 19 and its dependent claims 20-23, 28, 30 and 31 are believed allowable for the same reasons discussed relative to claim 1.

Independent claim 36 specifies a communication system having controlled data access to a medium. The system comprises a hub having transceiving means for communication via the medium and data processing means. A plurality of distributed stations each has transceiving means for communication with the hub via the medium and the data processing means. The data processing means of the hubs allocates a plurality of channels for data communications between the stations and the hub. A number of channels is at least equal to the number of stations. Each station owns at least one channel. Each channel is varyingly in a distinct one of an empty, a reserved, or an owner state. The states are defined similar to claim 19, discussed above.

As discussed above, neither Mayrand et al. or Enns et al., or any proper combination thereof, does not disclose or suggest a number of channels being at least equal to a number of stations with each station owning at least one channel, and each channel being varyingly in a distinct one of three states, an empty, a reserved or an owner state, with the states defined as recited in the claim. Therefore, claim 36 and its dependent claims 37-42, 47, 49 and 50 are not obvious.

Independent claim 58 is generally similar to independent claim 36, differing in the specific definitions for the empty state and reserve state. Claim 58 and its dependent claims 59-64, 69, 71 and 72 are not obvious for the same reasons previously discussed.

Independent claim 81 specifies a wireless local area network having a hub and a plurality of distributed stations, similar to that recited in claim 58. Claim 81 and its dependent claims 82-87, 92, 94 and 95 are not obvious for the same reasons previously discussed.

Independent claim 103 specifies a method for communications access between a hub and a plurality of distributed stations over a medium, comprising providing a plurality of channels for data communications between the stations and the hub, wherein each channel is varyingly in a distinct one of an empty, a reserved, or an owner state. The empty state provides a channel to which any station can have access. The reserved state provides a channel having an owner into which a station having made a reservation with the hub, but not owning the channel, can have access if not being used by the owner, and further to which the owner can resume access on demand; and the owner state providing a channel to which only the owning station has access. Claim 103 and its dependent claims 104 and 105 are not obvious for the same reasons discussed above.

Independent claim 106 specifies a hub for a communication system including transceiving means and data processing means, as generally recited in claim 58. Claim 106 is not obvious for the same reasons discussed above relative to claim 58.

For the above reasons, the obviousness rejection is improper and ought be withdrawn.

Applicants traverse the rejection of claims 12, 29, 48, 70 and 93 as obvious over Mayrand et al. in view of Enns et al., and further in view of Lindskog et al. U.S. Patent No. 6,363,267.

These claims are dependent claims. The deficiencies with respect to Mayrand et al. and Enns et al. is noted above. The present application was filed, as International Application No. PCT/AU98/00785, on September 18, 1998. Lindskog et al. has a filing date of April 7, 1999. It is not prior art to the present application. The rejection is improper and ought be withdrawn.

Applicants traverse the rejection of claims 16, 33 and 107-109 as obvious over Mayrand et al. in view of Enns et al. and further in view of Haartsen U.S. Patent No. 6,650,630. Again, these are dependent claims. The deficiencies with respect to Mayrand et al. and Enns et al. is discussed above. Haartsen has a filing date of June 25, 1999. Again, it is not prior art relative to the present application. Therefore, the rejection is improper and ought be withdrawn.

Applicants note the allowability of claims 7-10, 24-27, 43-46, 65-68 and 88-91. However, since the claims on which they depend are allowable, these claims are not rewritten in independent form at this time.

Reconsideration of the application and allowance and passage to issue are requested.

Respectfully submitted,

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